KRUG (F.)

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Trendelenburg's Posture in Gynæcology, with Demonstration of a Convenient Apparatus for Obtaining the Same.

BY FLORIAN KRUG,
OF NEW YORK.

Trendelenburg's Posture in Gynæcology, with Demonstration of a Convenient Apparatus for Obtaining the Same.[1]

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TRENDELENBURG'S posture has come to stay. It will stay because of its great intrinsic value. It is not merely an ephemeral surgical whim, nor can it be compared in any sense to the great number of so-called new methods, gotten up for the special benefit and glory of the so-called inventor, which, however, are essentially nothing else but slight modifications of old practices. But you might say Trendelenburg's posture is nothing new either. Of course the old proverb, "There is nothing new under the sun," holds good in this respect, as in every other.

In my paper before the American Association of Obstetrics and Gynæcology, September 18, 1891,[2] I cited Fabricius ab Aquapeudente, born in Italy, 1537, as having been the first to recommend the elevation of the patient's pelvis, by hanging him up by his legs and shaking him well, in order to reduce an incarcerated hernia. It has since been pointed out to me by Dr. Robert G. Harris that John Hamelius of Germany, had used this procedure before Fabricius ab Aquapeudente was born. I feel indebted to Dr. Harris for his courtesy in doing so.

This certainly shows that the advantages of using the law of gravitation in surgical diseases was known to our ancient predecessors. However, this does not detract one particle from the credit due to Professor Trendelenburg, of Bonn, who, first of all, intelligently understood the advantages which this posture offers in modern surgery; who pointed them out to others working in the same field, and induced them to adopt the same course systematically. The posture deservedly bears his name.

He first advocated it in suprapubic cystotomy only. While witnessing an operation of that kind, done by one of his former assistants, I was immediately impressed with the idea what enormous advantages this method would offer in gynæcological work, and I at once commenced to make use of it in my abdominal operations. This was in the beginning of 1888, and only later on I learned that Trendelenburg himself started to use it in gynecic surgery at about the same time.

[1] Read by invitation before the Philadelphia Obstetrical Society, June 4, 1892.

[2] See Transactions of American Association of Obstetrics and Gynæcology, 1891.

At first I only used it in cases where I had to work in the depth of the true pelvis and expected to encounter special difficulties. However, so pleased was I with the facilities gained through the method that within a short time I employed it in almost every case, and I am willing to confess that I wonder now how I got along formerly.

I am not standing alone in my appreciation of the wonderful advantages of the method. Since the days when the question was frequently put to me by gentlemen who witnessed my operations: "Why do you place your patient in that funny position and let her almost stand on her head?" or when I was asked what I meant by "Trendelenburg's posture," in relating my cases or discussing those of others—I say—since those days a great change has taken place. There is no country in the world where good things are recognized as quickly and adopted as speedily as in America; and at the present day there are already more prominent surgeons avowedly using this method in the United States than there are to be found in the country where it originated.[1]

I shall not lose many words in pointing out any further the advantages of the method. I feel confident that, could I have the privilege of operating before you on an especially difficult case, the advantages of Trendelenburg's posture would be so self-evident that any further recommendation would be unnecessary. In fact, I can assure you, that of the many surgeons to whom I had the pleasure of demonstrating the method, not a single one has failed to become a convert to it.

Really, I fail to see what objections could possibly be raised against it. As far as I am concerned, I have not discovered any yet, although I have used the posture in nearly three hundred abdominal sections, and I should think that any possible drawbacks

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[1] I hope to be pardoned for giving a few pickings from an extremely large number of communications and inquiries which I received on the subject of Trendelenburg's posture.

DR. ARCHIBALD MCLAREN.
ST. PAUL, Dec. 2, 1891.
. . . I was particularly pleased with what you say of Trendelenburg's position and of its advantages. I have been using that position for the past year and do not see now how I did my work without it.

DR. E. E. MONTGOMERY.
Feb. 11, 1892.
. . I have recently tried the Trendelenburg posture in some three operations and must confess that you have by no means overestimated its advantages.

DR. JAMES F. W. ROSS.
TORONTO, CANADA, Nov. 5, 1891.
. . . I have now done two cases in that (Trendelenburg's) position, and yesterday cleared out the worst pus tubes it has ever been my lot to meet with; and I feel satisfied that I could not have controlled the bleeding without Trendelenburg's posture . . . it worked like a charm. . . . I also did my first vagino-abdominal hysterectomy two days ago in this position. . . . The adhesions were desperate and therefore the position was of considerable value. . . .

WM. WATKINS SEYMOUR.
TROY, May 7, 1892.
. . . This week I have done here two ovariotomies with your apparatus for Trendelenburg's posture, and was amazed at its revelations. I am converted to a firm belief in its great advantages in pelvic work and shall try it not only in ovariotomies but in appendicitis. In these latter cases I should think it would be a very great help. . . .

DR. CHAS. P. STRONG.
BOSTON, March 27, 1892.
You will, I am sure, be glad to know how satisfactory your portable Trendelenburg apparatus has proven itself. I extirpated a uterus for malignant disease, carrying the dissection down through the vagina to about an inch from the vulva. . . . The ease with which I did this was a marvel to myself and those present, etc.

DR. RALPH WORRALL.
SYDNEY, N. S. WALES, Jan. 22, 1892.
. . . A paper by you on Trendelenburg's posture and an account of an appliance which you have devised for maintaining the position. It occurred to me that this was just what I had been needing, for it is impossible to cart about a special table. . . .

should have manifested themselves to me by this time. Still, I leave it to the members of this learned society to raise whatever objections they may have against the method and I trust that I shall succeed in dispelling all their scruples.

You all know that Trendelenburg's posture simply means the elevation of the patient's pelvis, in such a way that the body slants down on an incline of at least 45° to the horizontal; in some cases an elevation of up to 60° is desirable. This certainly does not involve the slightest risk to the patient in itself; on the contrary, where you have to operate on an exsanguinated patient, it is an efficient safeguard against shock from sudden anæmia of the brain.

No matter whether you choose ether or chloroform as an anæsthetic, the posture does not interfere with the narcosis in the least; but to anyone who has never seen an abdominal section done in this posture it will be a perfect revelation. All the abdominal viscera gravitate towards the diaphragm, and in that way the pelvic cavity is rendered perfectly free and easy of access. A single flat sponge or a piece of sterilized gauze keeps the intestines out of view and harm's way during the entire operation. In this way the most trying feature in abdominal surgery, viz., the constant annoyance resulting from the slipping in between of the guts, is effectively avoided. A great deal of time is saved in that way, and what is still more important the intestines are not handled unnecessarily, and thus injury to the peritonæal endothelium is avoided.

Since using Trendelenburg's posture I never had to resort to ~~ereutra~~-tion of the intestines, not even in the most difficult cases; while I learned from clinical reports of other operators, who have not yet adopted this method, that every now and then they meet with difficulties which seem to necessitate this risky procedure.

The greatest advantage of all, however, is that Trendelenburg's posture enables the surgeon to perform the operation under control of the eye, so that he sees what he is doing and does not have to rely upon his sense of touch alone, while dealing with the most difficult pathological changes in the peritonæal cavity. I certainly do not underrate the value of manual dexterity, and I certainly consider a highly-trained, delicate sense of touch one of the requirements of a successful surgeon; but if any one tells me that he did not care to use Trendelenburg's posture for no other reason than that his fingers could give him the same information that eyesight does, he would strike me as a man who would *deliberately blindfold himself while performing a serious operation on a fellow-being, just to show that he could do it without looking at it.*

I believe gynæcology to be a distinct branch of surgery; still I hold that it must be governed by the same fundamental rules that are universally adopted in modern surgical art. Now, to make as small an incision as possible, then to extirpate tubes and ovaries, which are the seat of purulent disease, by the *tearing process*, to then indiscriminately flood the abdominal cavity with hot water, under the mistaken idea that in that way infectious material which has been left behind can be eliminated, and to leave the rest to Providence and the drainage-tube, is a practice which is in disaccord with

the *very foundation of modern, sound, surgical principles*, and which cannot be denounced too strongly.

Still I do not intend to wander from my subject, but like to point out on the other side the facility which Trendelenburg's posture affords us to peel off and tie off pus-tubes and ovaries, without rupturing them, under the combined control of eye and touch. To mop off all little pools of blood or sanies that might be found in the depth of the pelvis is easily and perfectly accomplished. Any bleeding spot is readily detected and as easily tied off, as if we were operating on an arm or leg.

As the entire contents of the cavity are before us, like in an anatomical demonstration, accidental injury to the different organs can safely be guarded against. The ureters are plainly visible and can, therefore, be avoided; the contour of the bladder is readily made out, and the organ will never be injured, except by gross negligence, if Trendelenburg's posture is used. Adhesions with the gut and omentum are not rudely torn in a haphazard way, but are separated in a surgical manner, under perfect control of the eye, while bleeding points are tied at once.

It would lead too far to enter into details and to relate the special advantages of Trendelenburg's posture in the different operations we are called upon to perform in the woman's peritoneal cavity. I must refer you to my former paper before the American Association of Obstetricians and Gynæcologists for its special applications.

DISCUSSION.

DR. MONTGOMERY:

I have followed the suggestion of Dr. Krug, and have used a similar contrivance. It is very advantageous, and the position is what the doctor recommends it to be. Everything can be seen while operating, as all the organs are under the eye. It demonstrates all the steps of an operation. Students pronounce it most satisfactory, as they are enabled by it to see every part of the operation. It calls to my mind the manner in which the farmers, when I was a boy in the country, spayed pigs.

DR. WM. GOODELL:

I have nothing but commendation to offer for Trendelenburg's position. I saw it for the first time in Germany, last summer. There is nothing like it for bad adhesions. I used it last week before the summer class, and I dare say it is the only time the students ever saw all the steps of an operation. It enables the eye and hand to work together. When the woman is in the usual horizontal position, the recti muscles sometimes refuse to relax, no matter how far the ether is pushed; but in the Trendelenburg position this embarrassing rigidity never happens. I aided a friend to-day in a bad case of adherent pus tubes. Nothing could be done intelligently until this position was used, then he was enabled to see the parts and to prevent the pus from escaping into the peritoneal cavity. It is indispensable in complete suprapubic hysterectomies; and is an admirable position in which to perform supravaginal amputation for fibroid tumor. One can see everything in these trying cases, and it is, therefore, an invaluable aid.

I think the apparatus which Dr. Krug has devised is simplicity itself and far less cumbersome than the one I brought from Germany.

DR. HIRST:

The only disadvantage of Dr. Krug's device is its cumbersomeness. This afternoon while in the train, I thought of something that would answer the purpose equally as well, and the materials necessary for its construction at the bedside can be readily carried by the surgeon. I made a drawing of this and will pass it around.

DR. E. P. DAVIS:

The point of simplicity which Dr. Hirst makes is a good one. A strong high-backed rocking-chair, with the rockers removed, answers the purpose admirably. The chair is

turned upside down, and the legs of the patient are allowed to hang over the back of the seat. I have operated on six cases, using the broken rocker to obtain this position. It is very satisfactory.

DR. BALDY:

I like the Trendelenburg position. In one case I improvised a table for that purpose, but it proved to be too high for easy work. I was convinced of the utility of the position for certain cases, but the majority of cases are too simple to make use of this method.

DR. J. PRICE:

As yet I have not given this position a trial. I will not criticise the apparatus, but will criticise our old methods, to which exception has been taken.

Dr. Krug says this has come to stay. This was the cry of the confederate soldiers at Gettysburg, and they *did* stay. Some one says the position has special advantages for dealing with fibroids in the pelvis and for hysterectomies. I do not want fibroids at the level of my head to do good surgery. You can saw the table off if you like. Accidents are liable to occur working at this height. Had I not followed the plan which I did, my hysterectomies would have been failures. I have never convinced myself that I could improve on my results. Men have criticised irrigation, drainage and everything else that is good. They have even condemned the pathology of pelvic troubles. Way back in the history of abdominal surgery several authors allude to vaginal ovariotomies; two cases were saved by irrigation, two by drainage. Some insist on long incisions, and say there is no more risk of hernia from a four-inch than from a two-inch incision. I do not agree to this. Unless great care is taken, as in suppurating dermoids, pus and blood will flow if sponges are not used.

One of the gentlemen has called attention to the risk of rupture of such accumulations, or rather the absence of risk. Take, for example, multiple ovarian abscess. I know of no method that will avoid rupture in the enucleation. In the enucleation of a suppurating ovary the size of an egg or orange, the sac is usually ruptured. It cannot be helped, for it is next to impossible not to break this sac. The sac or pelvic accumulations do not leave their situations, even when the position is that of Trendelenburg. In an operation I had to-day for appendicitis, I had to shell out a diseased ovary, cæcum and appendix. To-morrow I shall have the same trouble. All diseased tubes and ovaries seek a lower level. I do condemn a long incision in the elevated hip position. I have seen assistants tug at retractors till nothing but harm could result. The long incision gives needless exposure and manipulation and admits air. I speak with an experience of fifteen hundred operations.

Dr. Krug has criticised our modern methods. I cannot for a moment put away water; water must be used in abundance as long as my mortality is below five per cent. I will welcome any improvement when my mortality reaches nine or ten per cent. The horizontal position cannot be condemned. Enucleation and evacuation must be made, no matter in what position. I am willing to welcome anything that will minimize time, incision and exposure.

DR. KRUG (closing):

I have very little to say, as, with one exception, all the speakers were in favor of the posture.

Dr. Price has criticised everything and everybody except himself and the points I tried to make in my paper. I have laid stress on the importance of a sensitive touch and a well-trained hand; but I must still insist on the great advantage of working under the *combined* guidance of the *eye and* hand, notwithstanding his remarks.

Owing to Trendelenburg's posture, I have not ruptured so many pus sacs lately as before in the horizontal posture, although this accident could not always be avoided. Still, if possessed of any degree of dexterity, the operator can guard against the fluid contaminating the abdominal viscera. On the contrary, it is by far easier to do so in the elevated than in the horizontal position. I had no difficulty in safely disposing of the pus, even in most complicated cases.

Dr. Price speaks of men with limited experience, and mentions the large number of his operations. Now, sir, since he has never tried Trendelenburg's posture, and as I have done nearly three hundred sections in that way, while being fully familiar with the old method, I must claim the experience on my side.

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